

(B) IN THE CLAIMS

1. (Currently Amended) An A cooling system for an MRI device, the MRI device having a magnet, a set of gradient coils and an RF coil assembly defining a longitudinal cylindrical aperture in the MRI device, comprising:

an RF coil;

a cylindrical patient bore enclosure having an inside and an outside; comprised of:

a longitudinal outside cylinder, the outside cylinder having an inner wall and an outer wall, the outer wall of the outside cylinder being located inside the cylindrical aperture of the MRI device;

a longitudinal inside cylinder, the inside cylinder having an interior wall providing the patient bore enclosure and having an exterior wall;

a plurality of longitudinal cooling tubes attached to exterior of the patient bore enclosure~~interposed between the exterior wall of the inside cylinder and the interior wall of the outside cylinder;~~ and

a means for directing air through the cooling tubes to cool the RF coil~~patient bore enclosure.~~

2. (Cancelled)

3. (Cancelled)

4. (Cancelled).

5. (Currently Amended) An A cooling system for an MRI device, the MRI device having a magnet, a set of gradient coils and an RF coil assembly defining a cylindrical aperture in the MRI device, comprising:

an RF coil;

a cylindrical patient bore enclosure, having an inside and an outside; comprised of a continuous cooling tube attached to the patient bore enclosure, said cooling tube being wound in the general shape of a helix; and

an outside cylinder, the outside cylinder having an inner wall and an outer wall, the outer wall of the outside cylinder being located inside the cylindrical aperture of the MRI device;

an inside cylinder, the inside cylinder having an interior wall providing the patient bore enclosure and having an exterior wall;

at least one helical cooling tube interposed between the exterior wall of the inside cylinder and the interior wall of the outside cylinder; and

a means for directing air through the at least one cooling tube to cool the RF coilpatient bore enclosure.

6. (Cancelled)
7. (Cancelled)
8. (Cancelled)
9. (Cancelled)
10. (Cancelled)
11. (Cancelled)
12. (Cancelled)
13. (Cancelled)
14. (Cancelled)
15. (Cancelled)
16. (Cancelled)

17. (Currently Amended) A patient bore cooling assembly for an RF coil in a cylindrical MR system MR device, the MR device having a generally hollow cylindrical magnet space, a generally hollow cylindrical gradient coil space, within which a plurality of gradient coils are located, inside of which is a generally hollow cylindrical space within which an RF coil is located, comprising:

~~a gradient coil winding of hollow cylindrical configuration; a~~

~~an RF coil of hollow cylindrical configuration inside the gradient coil winding; a generally cylindrical patient bore enclosure located inside of the RF coil having an inside surface and an outside surface, space comprised of:~~

~~a longitudinal outside cylinder, the outside cylinder having an inner wall and an outer wall, the outer wall of the outside cylinder being inside the cylindrical aperture of the MR1 device;~~

~~a longitudinal inside cylinder, the inside cylinder providing an interior wall defining the patient bore enclosure and having an exterior wall;~~

~~a plurality of longitudinally spaced longitudinal cooling tubes attached to interposed between the exterior wall of the inside cylinder and the interior wall of the outside surface of the patient bore cylinder; and~~

~~a means for directing air through the cooling tubes to cool the RF coil patient bore enclosure.~~

18. (Cancelled)

19. (Currently Amended) A patient bore cooling assembly for an RF coil in a cylindrical MR system MR device, the MR device having a generally hollow cylindrical magnet space, a generally hollow cylindrical gradient coil space, within which a plurality of gradient

coils are located, inside of which is a generally hollow cylindrical space and within which the RF coil is located, comprising:

a gradient coil winding of hollow cylindrical configuration;;

an RF coil of hollow cylindrical configuration inside the gradient coil winding, the generally cylindrical patient bore enclosure located inside of the RF coil having an inside surface and an outside surface; space comprised of:

an outside cylinder, the outside cylinder having an inner wall and an outer wall, the outer wall of the outside cylinder being inside the cylindrical aperture of the MRI device;

an inside cylinder, the inside cylinder providing an interior wall defining the patient bore enclosure and having an exterior wall;

a cooling tube in a helical configuration attached to the outside surface of the patient bore at least one helical cooling tube interposed between the exterior wall of the inner cylinder and the interior wall of the outside cylinder; and

a means for directing air through the at least one cooling tube to cool the RF coil patient bore enclosure.

20. (Cancelled)

21. (Cancelled)

22. (Cancelled)

23. (Cancelled)

24. (Currently Amended) In an open architecture MR imaging system, the MR imaging system having a generally hollow cylindrical magnet space, a generally hollow

cylindrical gradient coil space, within which a plurality of gradient coils are located, inside of which is a generally hollow cylindrical space within which an RF coil is located an RF coil assembly, comprising:

a gradient coil winding of hollow cylindrical configuration;
an RF coil of hollow cylindrical configuration inside the gradient coil winding; a generally cylindrical patient bore enclosure located inside of the RF coil having an inside surface and an outside surface, and space comprised of:
an outside cylinder, the outside cylinder having an inner wall and an outer wall,
the outer wall of the outside cylinder being inside the cylindrical space of
the MRI device;
an inside cylinder, the inside cylinder having an interior wall defining the patient
bore enclosure and having an exterior wall
a plurality of longitudinally spaced cooling tubes attached to the outside surface of the
cooling tubes interposed between the exterior wall of the inner cylinder and the
interior wall of the outside cylinder; and
a means for directing air through the cooling tubes to cool the patient bore enclosure.

25. (Original) The open architecture MR imaging system of claim 24 wherein a plurality of cooling tubes are embedded within the RF coil.